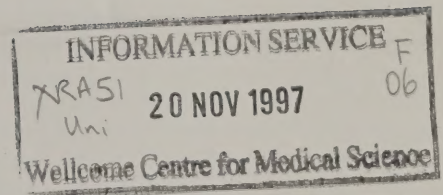


May 1997

# BUDGET TRENDS

## Federal Investment Outlays, Fiscal Years 1981-2002



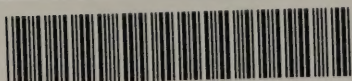
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IS 276251

May 21, 1993

The Honorable Frank R. Lautenberg  
Ranking Member  
Committee on the Budget  
United States Senate

The Honorable George E. Brown, Jr.  
Ranking Member  
Committee on Finance  
House of Representatives

Gao: The past decade, concerns have been raised about mounting levels of federal and discretionary financial investment and national savings. Continued efforts to reduce the federal government's debt could help decrease national savings and expand domestic capital markets for private investment. At the same time, reducing the deficit could also reduce the government's discretionary spending, which increases new federal investment. Thus, as we and others have noted, it is important to pay attention to the consequences of federal spending.

As the committee on the necessary spending have reported with the broad agreement to balance the budget by fiscal year 2001, many congressional initiatives have sought to promote long-term economic growth. These have included the House Science Committee's work on a proposed H.R. 1000, as well as the Senate's proposed H.R. 1000. The House Science Committee and Senate Commerce Committee have proposed H.R. 1000 as a means to increase federal investment in basic science and medical research over the next 10 years. They have both expressed interest in the future of spending for research and education that better information on these investments would help decision making. This report responds to your requests for recent data and estimates of future federal investments through fiscal year 2002.

## Results in Brief

The share of total federal budget outlays and of gross domestic product (GDP) devoted to government<sup>1</sup> gradually declined from the early 1960s through 1990. According to the Congressional Budget Office's (CBO) policy estimates, it is

<sup>1</sup> This definition of federal outlays—total federal government spending—includes the federal government's budget and the Social Security Administration's budget.





Accounting and Information  
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B-276283

May 21, 1997

The Honorable Frank R. Lautenberg  
Ranking Member  
Committee on the Budget  
United States Senate

The Honorable George E. Brown, Jr.  
Ranking Member  
Committee on Science  
House of Representatives

Over the past decade, concerns have been raised about declining levels of federal and domestically financed investment and national savings. Continued efforts to reduce the federal government's deficit could help increase national savings and expand domestic capital available for private investment. At the same time, reducing the deficit places constraints on the government's discretionary spending, which finances most federal investment. Thus, as we and others have noted, it is important to pay attention to the composition of federal spending.

As the constraints on discretionary spending have tightened with the broad agreement to balance the budget by fiscal year 2002, recent congressional initiatives have sought to promote long-term private sector economic growth. These have included the House Science Committee's work on a proposal (H.Con.Res. 58) to incorporate an investment component into the budget resolution and Senator Gramm's proposal for a National Research Investment Act (S. 124) to increase federal investment in basic science and medical research over the next 10 years. You have both expressed interest in the future of spending for investment and indicated that better information on recent investment trends would help decision-making. This letter responds to your requests for trend data and estimates of future outlays for investments through fiscal year 2002.

## Results in Brief

The share of total federal budget outlays and of gross domestic product (GDP) devoted to investment<sup>1</sup> gradually declined from the early 1980s through 1996. According to the administration's policy estimates, this

<sup>1</sup>GAO defines investment as federal spending, either direct or through grants, directly intended to enhance the private sector's long-term productivity.





decline will continue for 1997 through 2002.<sup>2</sup> However, over the same time period, a slightly different picture emerges when investment outlays are converted to constant 1992 dollars.<sup>3</sup> Investment spending in estimated constant dollar outlays increased slightly from the 1980s to the mid-1990s, with a gradual decline through 2002.

Investment by category (character class<sup>4</sup>) in constant dollars shows varying patterns. Physical capital remained relatively stable from the 1980s through 1995, with slight declines in 1996 and in the President's policy estimates for fiscal years 1997 through 2002. Research and development shows increases from the 1980s through 1990 and then drops off gradually. In contrast, education and training has shown a relatively steady increase from 1981 that is projected to continue through 2002.

The pattern of investment from 1981 through 2002 in constant dollars varies across budget functions.<sup>5</sup> Seven functions contain about 96 percent of investment outlays. Two of those functions, Education and Training (500) and Health (550), show a general increase over the period. The General Science function (250) shows an increase to the mid-1990s and then levels off. The National Defense (050) and Transportation (400) functions show increases followed by declines in the 1990s and through 2002. Investment spending in the Natural Resources and Environment (300) and Energy (270) functions show a continued downward trend from the 1980s through 2002.

## Background

The current budget structure does not highlight for decision-making purposes the differences between spending for long-term investment and current consumption because it treats all expenditures the same. Nor does the current budget process encourage the Congress to make explicit

<sup>2</sup>Estimated investment outlays for fiscal year 1998, using our definition and the President's policy estimates, total \$148.6 billion, or 7.2 percent of total estimated federal outlays and 1.8 percent of GDP.

<sup>3</sup>Constant dollars are dollar values adjusted for changes in the average price level. They represent the values that would exist if prices had remained at the same average level as the base period.

<sup>4</sup>Character classification is used to report investment activities separately from non-investment in the President's budget submission. Data are classified as investment by agencies when they finance activities yielding benefits largely in the future such as physical assets, research and development, and education and training. Character classification also distinguishes between grants to state and local governments and direct federal programs.

<sup>5</sup>The functional classification is a system of classifying budget resources to the national needs being addressed, such as defense and health. Each budget account is generally placed in the budget function that best reflects its major purpose. Functions may be divided into subfunctions depending on the complexity of the national need being addressed.





decisions about how much spending overall should be devoted to programs having a direct bearing on long-term growth and productivity.

We previously reported<sup>6</sup> that establishing investment targets within a framework similar to that contained in the Budget Enforcement Act (BEA) is the most promising way to incorporate an investment component. The Congress and the administration would reach agreement on the appropriate level of investment spending within a given fiscal policy path. We suggested that the design of the BEA discretionary caps could be changed to mandate a separate investment target (or floor) to protect against infringement from other activities.

In our 1993 report we concluded that despite the numerous possible definitions of investment, the most appropriate definition would include only federal spending, either direct or through grants, specifically intended to enhance the private sector's long-term productivity. This definition includes spending on (1) some intangible activities, such as research and development (R&D), (2) human capital designed to increase worker productivity, particularly education and training, and (3) physical assets to improve infrastructure, such as highways, bridges, and air traffic control systems.

This definition would not include spending for physical capital designed to achieve federal agency programmatic goals or improve the government's operating efficiency—such as spending for federal land, office buildings, and defense weapons systems—because such spending does not directly enhance productivity in the private sector. Some budget subfunctions—such as international affairs, recreational resources, and law enforcement and justice—have been excluded from this analysis because we believe the bulk of spending in these subfunctions does not directly enhance productivity. This definition of investment was also used in our November 1993 report on incorporating an investment component in the federal budget.

## Objective, Scope, and Methodology

The objective of this assignment was to determine the trend in the federal budget's actual investment outlays from fiscal years 1981 through 1996 and estimates for fiscal years 1997 through 2002.

<sup>6</sup>Budget Issues: Incorporating an Investment Component in the Federal Budget (GAO/AIMD-94-40, November 9, 1993).



As agreed with your offices, the analysis was done on a macro basis, using aggregate data by investment category and budget function and subfunction. We did not analyze data at either the agency or account level.

Outlay data used for this analysis were extracted from the automated information system that the Office of Management and Budget (OMB) used to prepare the President's annual budget request. We did not independently verify this information but traced totals to published budget documents. Reported actual outlay data (including offsetting collections but excluding offsetting receipts) for fiscal years 1981 through 1996 were used for both investment and total federal outlays; the President's estimates for his policy as shown in the 1998 budget were used for fiscal years 1997 through 2002. Annual GDP numbers and GDP implicit price deflators used in calculating constant dollar values for investment for fiscal years 1981 through 2002 were obtained from the Historical Tables accompanying the President's 1998 budget.

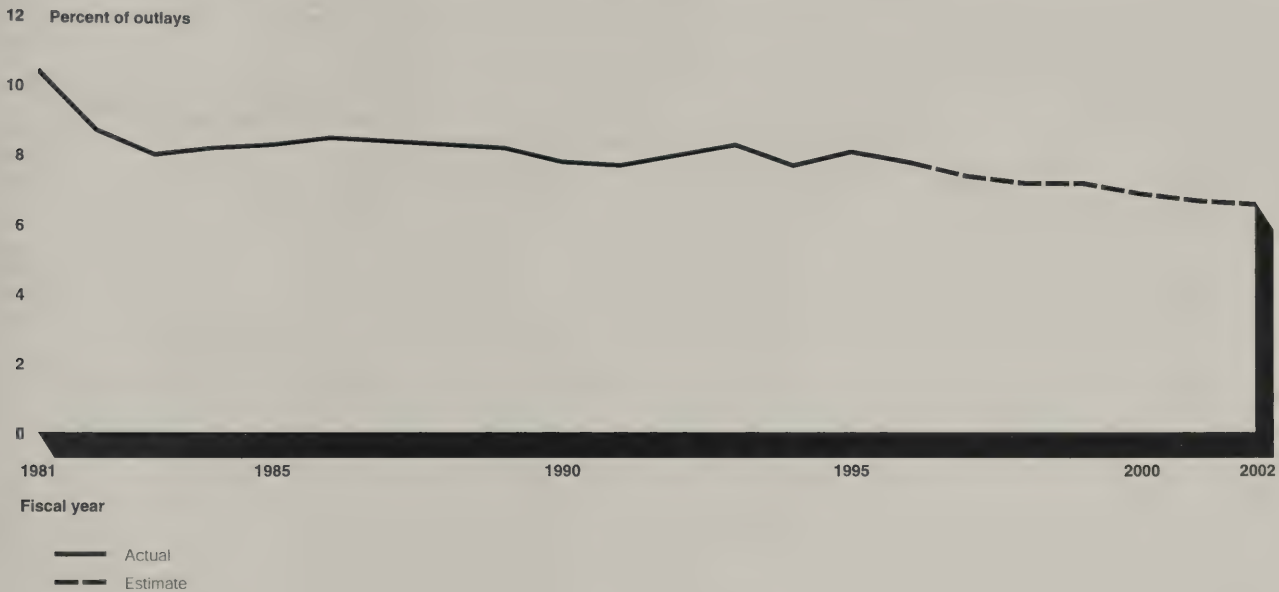
## Overall Investment Trends

The President's policy estimates of what we have categorized as investment spending for fiscal year 1998 amount to \$148.6 billion, or 7.2 percent of total outlays and 1.8 percent of GDP, part of a continuing downward trend. Actual total federal outlays for investment as a share of total outlays decreased from a high of 10.4 percent in 1981 to 7.8 percent in 1996. While investment rose in some years, the overall trend was down, as shown in figure 1. Investment outlays for fiscal years 1997 to 2002 are projected to continue this downward trend by steadily declining from 7.4 percent to 6.6 percent of total outlays.





Figure 1: Investment as a Percent of Total Outlays, Fiscal Years 1981 Through 2002



Investment's share of total outlays may be influenced as much by increases in noninvestment outlays as by investment outlays themselves. Accordingly, to offer assurance that the investment trend line was not primarily driven by increases in overall federal outlays, we analyzed the outlays' share of GDP. As shown in figure 2, we found that actual investment outlays as a percent of GDP followed the same pattern as investment outlays as a percent of total federal outlays. From a high of 2.6 percent of GDP in 1981, investment outlays fell to 1.9 percent of GDP in 1996. While the decline was not steady from year to year, the overall trend was downward. Future outlays are projected to remain steady at 1.8 percent of GDP for 1997 through 1999 and then steadily decline to 1.5 percent in 2002.





Figure 2: Investment as a Percent of Gross Domestic Product, Fiscal Years 1981 Through 2002



Figure 3 shows nondefense outlays<sup>7</sup> for investment as a share of total outlays. They drop from 8.5 percent of total outlays in 1981 to a low of 5.3 percent in 1990, then rise to 6.3 percent in 1995 and fall to 6.1 percent in 1996. Future estimates show a continued downward trend to 5.2 percent of total federal outlays in 2002. As shown in figure 4, nondefense outlays as a percent of GDP show the same pattern.

<sup>7</sup>Total federal investment outlays minus investment outlays in the Defense function.



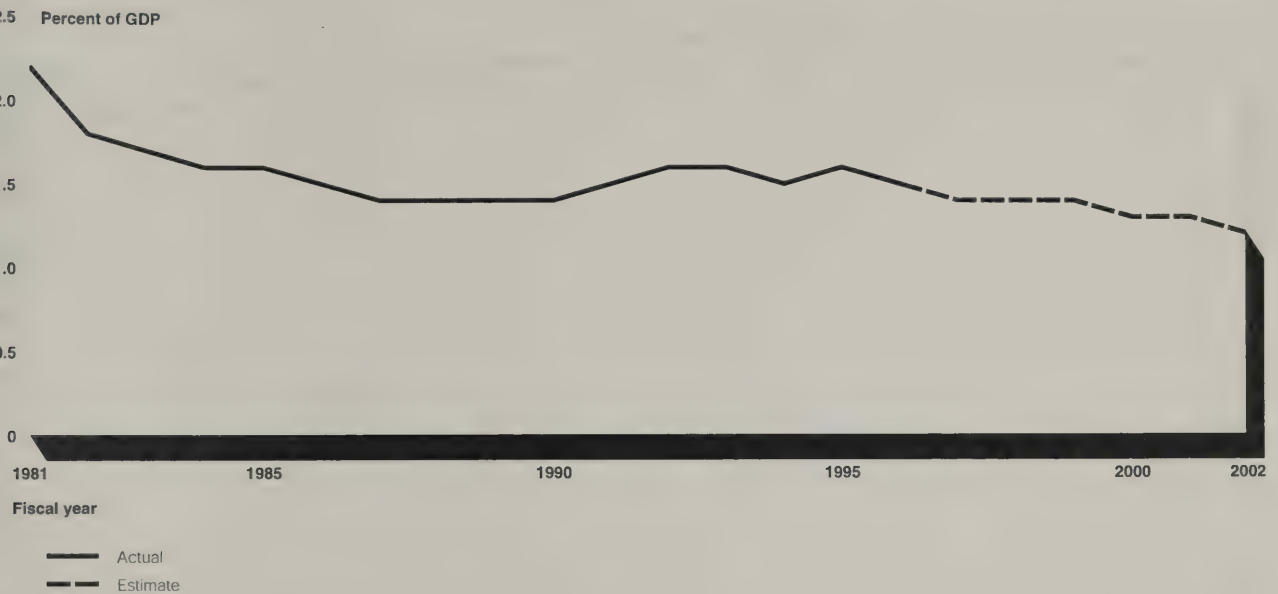
Figure 3: Nondefense Investment as a Percent of Total Outlays, Fiscal Years 1981 Through 2002







Figure 4: Nondefense Investment as a Percent of Gross Domestic Product, Fiscal Years 1981 Through 2002

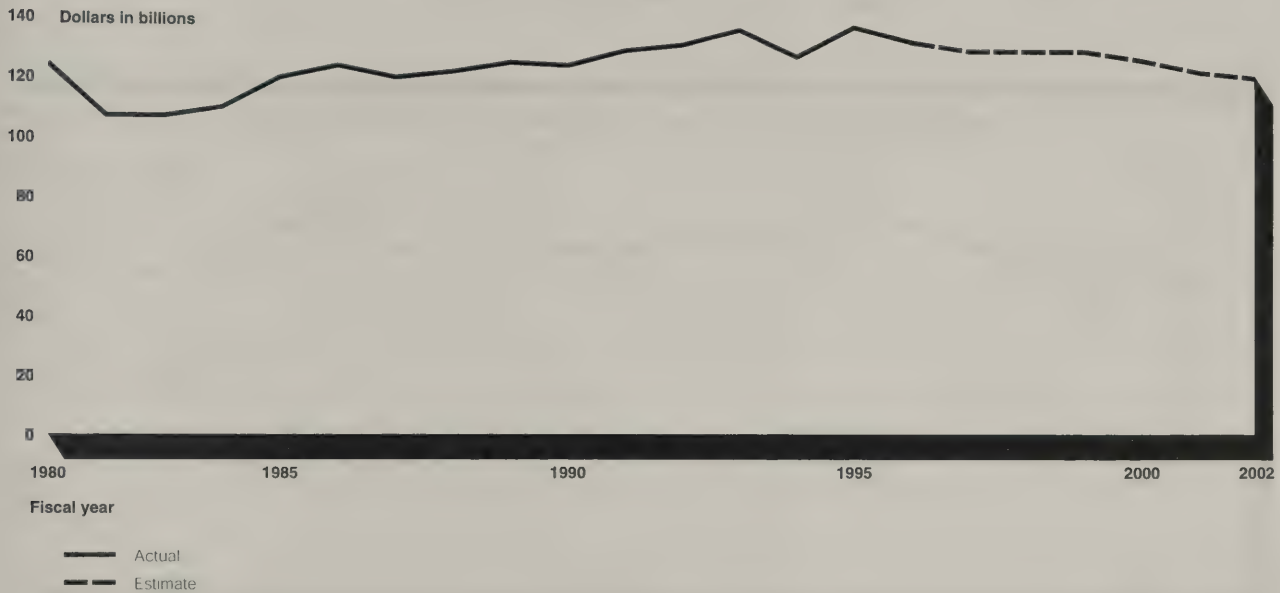


The spending pattern is different when analyzed in terms of constant dollars. As shown in figure 5, investment spending dropped from \$124 billion in 1981 to \$107 billion in 1982. However, it increased somewhat steadily to \$137 billion in 1995. Thereafter, estimates for constant dollar investment outlays decline to an estimated \$120 billion in 2002.





Figure 5: Investment for Fiscal Years 1981 Through 2002 in Constant 1992 Dollars

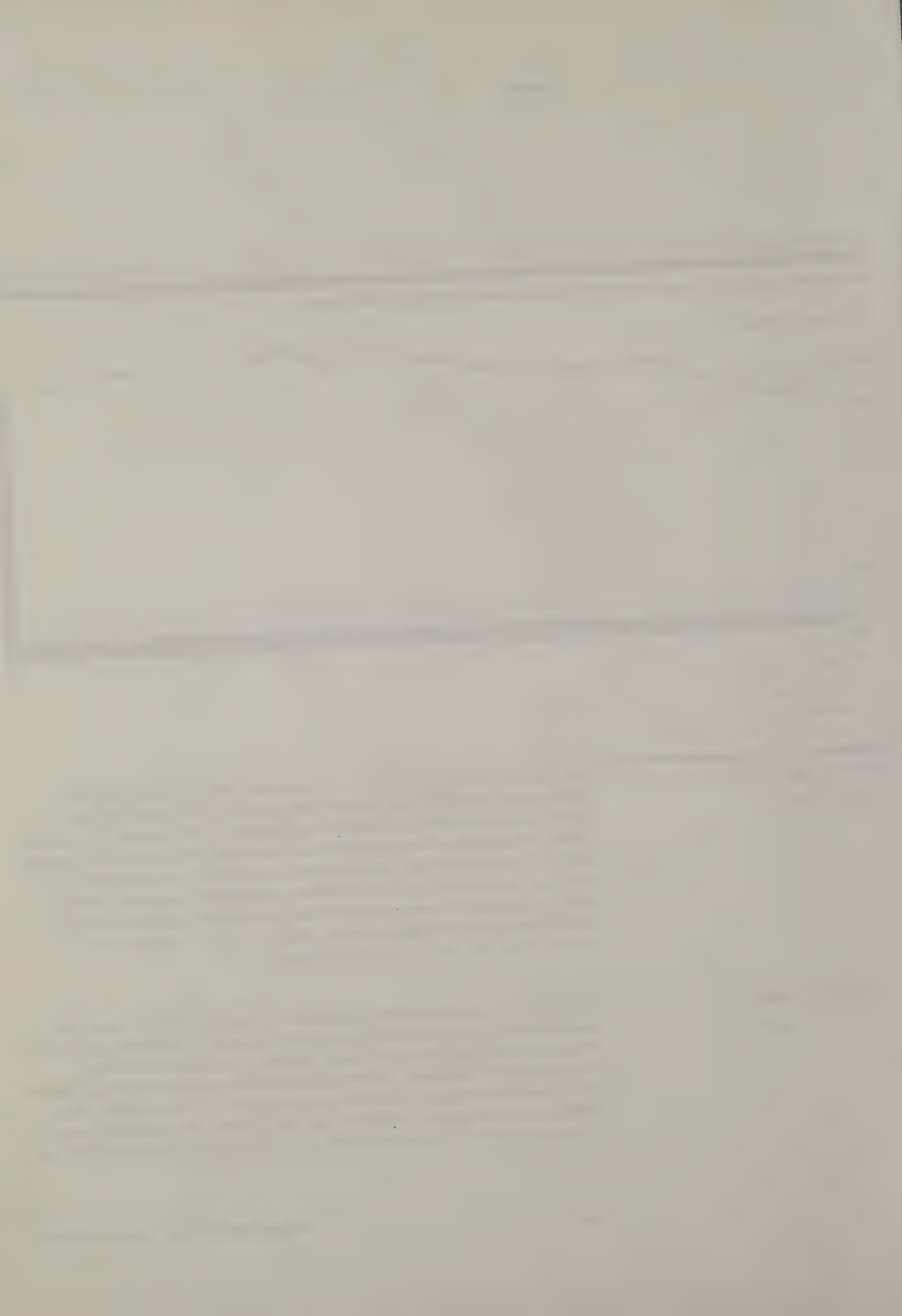


## Investment by Category

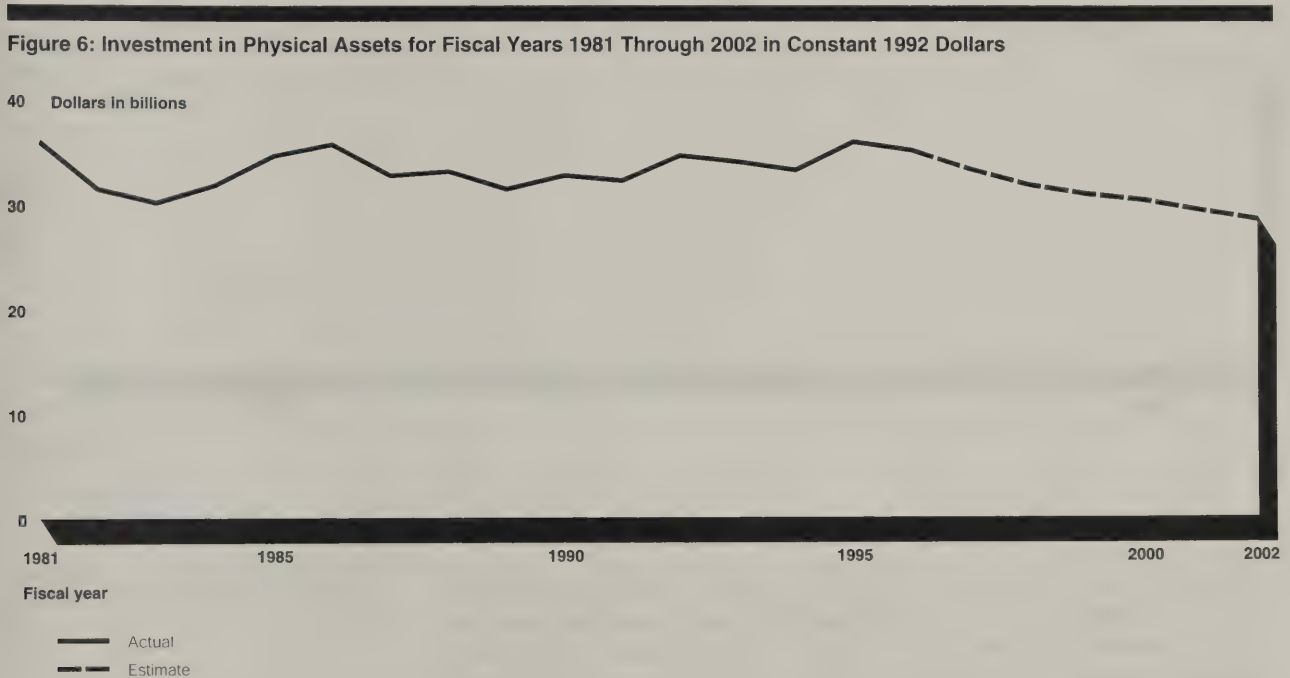
Investment by category is a way of describing the three major types of investment financed by the federal government—outlays for physical assets, research and development, and education and training. These basic categories are determined by character class designations federal agencies report in the budget. They are subdivided into more detailed categories, such as construction and rehabilitation or equipment (physical assets); basic, applied, and development (research and development); or direct federal programs or grants to others (physical assets, research and development, and education and training).

## Physical Assets

This category includes federal spending on physical assets intended to promote long-term private sector economic growth. It includes such major items as federal-aid highways, airport facilities and equipment, and Department of Energy and National Aeronautics and Space Administration (NASA) research facilities. It excludes spending for physical assets whose principal use is in agency missions, such as federal office buildings and weapons systems. In constant dollars, actual investment in physical assets



has remained relatively stable over the term of our analyses—ranging only from highs of about \$36 billion in 1981, 1986, and 1995 to a low of \$29 billion estimated for 2002 (see figure 6).



## Research and Development

This category includes the R&D activities of the Department of Defense (excluding applied research), NASA, National Institutes of Health, Department of Energy, and others. As shown in figure 7, outlays for R&D in constant dollars increased from \$48 billion in 1981 to \$63 billion in 1990, then decreased to \$58 billion in 1996. This gradual decline continues with the estimates declining to \$50 billion in 2002.



Figure 7: Investment in Research and Development for Fiscal Years 1981 Through 2002 in Constant 1992 Dollars



## Education and Training

This category includes items such as the Department of Labor's training and employment services, the Department of Veterans Affairs' readjustment benefits, and the Department of Education's student financial assistance. As shown in figure 8, education and training constant dollar outlays are generally expected to rise during the outyears, a slightly different trend from those of physical assets and R&D. After a sharp decline from 1981, outlays remained relatively flat at \$29 billion to \$31 billion through 1990 before beginning a rising trend, expected to reach the \$40 billion to \$42 billion level from 1998 through 2002.





Figure 8: Investment in Education and Training for Fiscal Years 1981 Through 2002 in Constant 1992 Dollars



## Investment by Budget Function

Budget functions are groupings of budgetary resources according to the national needs being addressed without regard to agency or organizational distinctions or the category (character class) of resources used.

Investment outlays in seven budget functions comprise about 96 percent of all investment outlays, with the top four comprising almost 80 percent of total investment. In descending order of constant dollar investment outlays, the functions are (1) Education, Training, Employment, and Social Services, (2) National Defense, (3) Transportation, (4) Health (principally R&D at the National Institutes of Health), (5) General Science, Space, and Technology, (6) Natural Resources and Environment, and (7) Energy. While there may be year-to-year variations in outlays, these seven functions can be placed into three groups based on their general spending trends—increased, mixed, and declining.

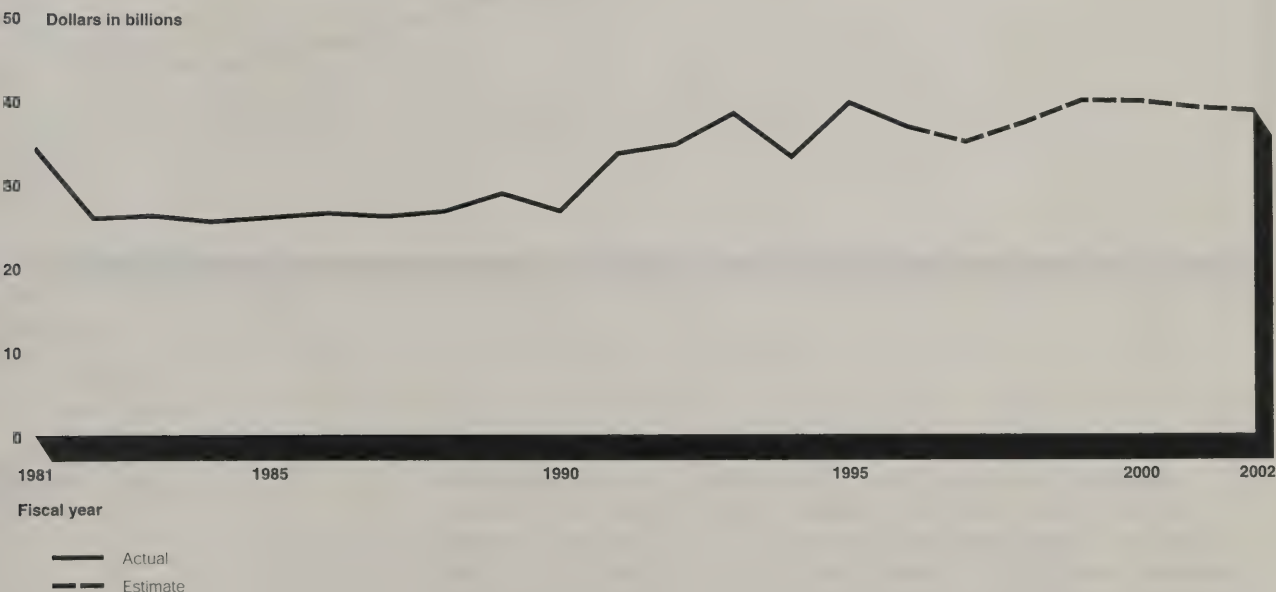
## Increased Spending

The Education, Training, Employment, and Social Services function contains such investment items as the Department of Labor's training and



employment services; the Department of Health and Human Service's children and families services programs; and the Department of Education's student financial assistance, special education, family education loans, and education for the disadvantaged programs. The overall constant dollar outlay trend for this function<sup>8</sup> (500) is upward, as shown in figure 9. A sharp decline from \$34 billion to \$26 billion between 1981 and 1982 was followed by generally increasing outlays up to \$40 billion in 1995. Outlays are projected to decline in 1997 before climbing back to the \$39 billion to \$40 billion level for 1999 through 2002.

Figure 9: Investment Outlays for the Education, Training, Employment, and Social Services Function in Constant 199 Dollars, Fiscal Years 1981 Through 2002



Constant dollar investment outlays in the Health function (550), which are largely R&D carried out by the National Institutes of Health, show a general

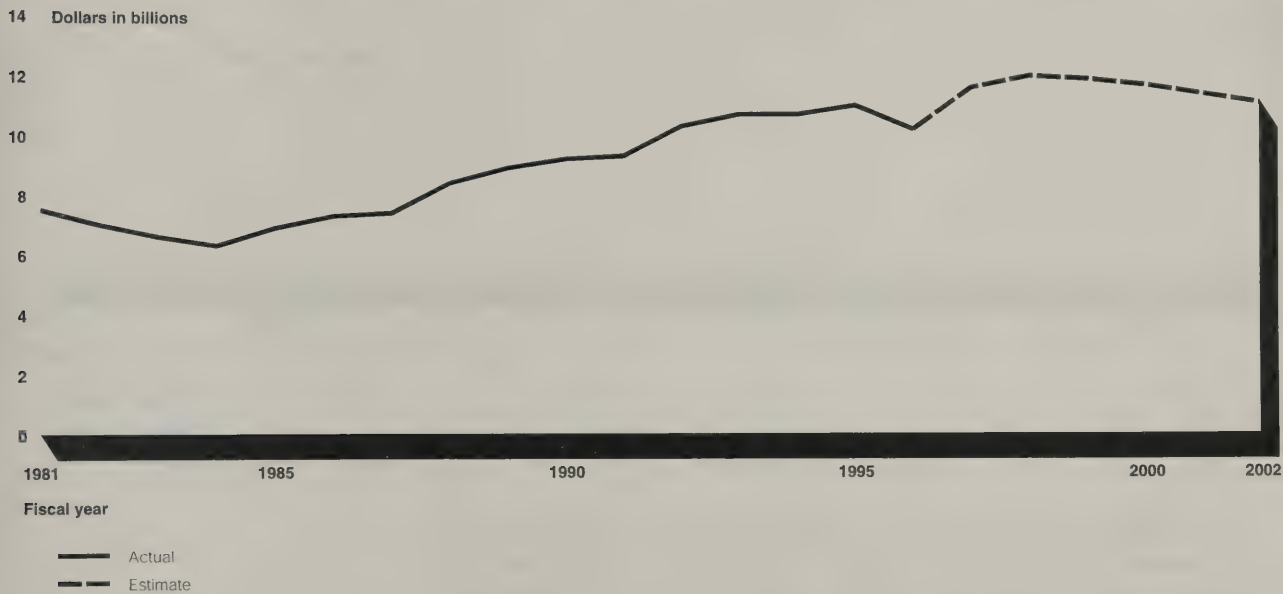
<sup>8</sup>The functional totals for education and training are lower than the category (character class) of investment called education and training. This is because some education and training in federal agencies is classified in functional reporting as part of the agency mission (for example, the National Defense function) rather than the education and training function.





rise from 1981 through 2002. Although outlays fell from about \$7 billion in 1981 to \$6 billion in 1984, they rose fairly consistently to an estimated \$12 billion in 1998 before starting a gradual decline to an estimated \$11 billion in 2002. (See figure 10.)

Figure 10: Investment Outlays for the Health Function in Constant 1992 Dollars, Fiscal Years 1981 Through 2002



## Mixed Trends

As shown in figure 11, the General Science, Space, and Technology function (250), which includes National Science Foundation and NASA research, dropped sharply in constant dollar outlays from \$10 billion in 1981 to \$5 billion in 1983. Outlays then continued a fairly steady increase to \$11 billion in 1995. In 1996, outlays and estimated future outlays begin to gradually decline through 2002, when they are projected to be about \$9 billion.



Figure 11: Investment Outlays for the General Science, Space, and Technology Function in Constant 1992 Dollars, Fiscal Years 1981 Through 2002



Investment outlays for the National Defense function (050), which includes basic and developmental military R&D, increased in constant dollars from \$22 billion in 1981 to \$40 billion in 1986, then stabilized at that level through 1990. After 1990, defense outlays declined rather steadily to \$31 billion in 1995. After a small increase in 1996 to \$33 billion, estimates through 2002 show a gradual decline to \$26 billion. (See figure 12.)



Figure 12: Investment Outlays for the National Defense Function in Constant 1992 Dollars, Fiscal Years 1981 Through 2002



Under our definition of investment, this function does not include military construction, weapons procurement, and defense applied research. Basic and developmental research are included because of possible adaptation to civilian use, particularly in the aviation industry. Others may have a different opinion on what defense items to include as investment. For example, OMB includes only defense basic research in its national capital<sup>9</sup> presentation.

Outlays for the Transportation function (400) include federal-aid highways spending from the transportation trust fund, federal transit formula grants, and facilities and equipment outlays from the airport and airway trust fund. In constant dollars, the outlays have peaks and valleys but the trend has been generally slightly upward. Outlays reached a high of \$27 billion in 1996. However, as illustrated in figure 13, estimates for 1997 and beyond show a downward trend to \$23 billion in 2002.

<sup>9</sup>Except for its exclusion of defense developmental R&D, OMB's national capital presentation closely approximates our definition of investment.





Figure 13: Investment Outlays for the Transportation Function in Constant 1992 Dollars, Fiscal Years 1981 Through 2002

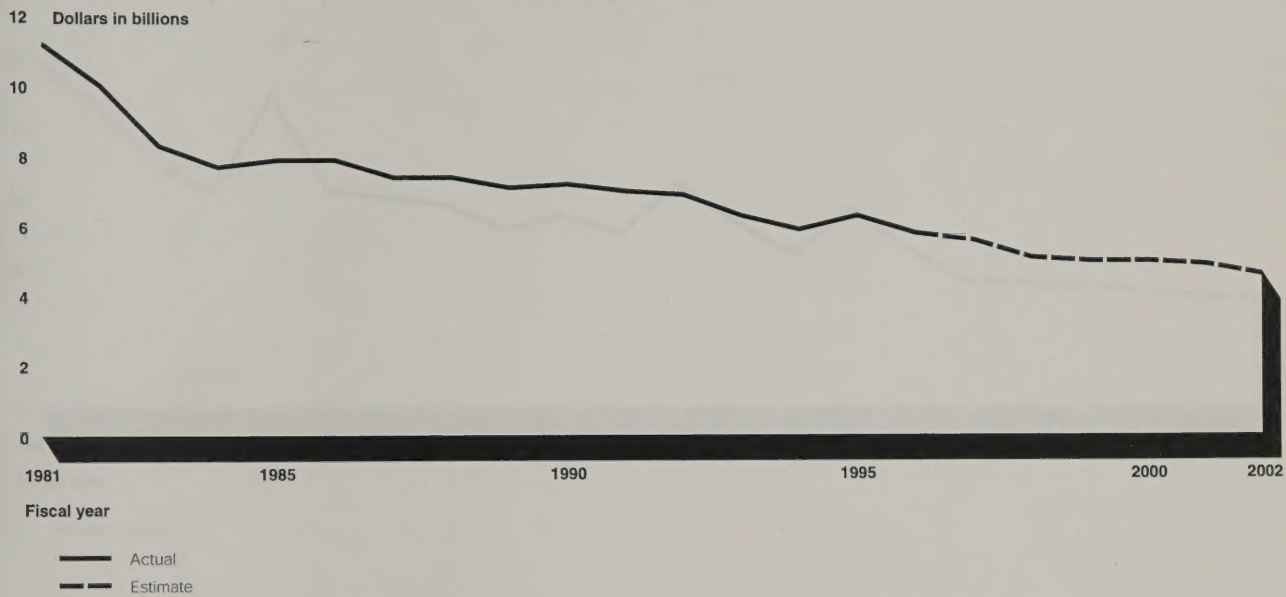


## Downward Trends

Investment outlays in the Natural Resources and Environment function (300), which includes items such as Environmental Protection Agency activities, show a continuous downward trend from 1981 through 2002. As seen in figure 14, constant dollar outlays of \$11 billion in 1981 decreased to \$6 billion in 1996 with a few intervening small upswings. Estimates for 1997 through 2002 show a continuing decline to about \$5 billion.



**Figure 14: Investment Outlays for the Natural Resources and Environment Function in Constant 1992 Dollars, Fiscal Years 1981 Through 2002**

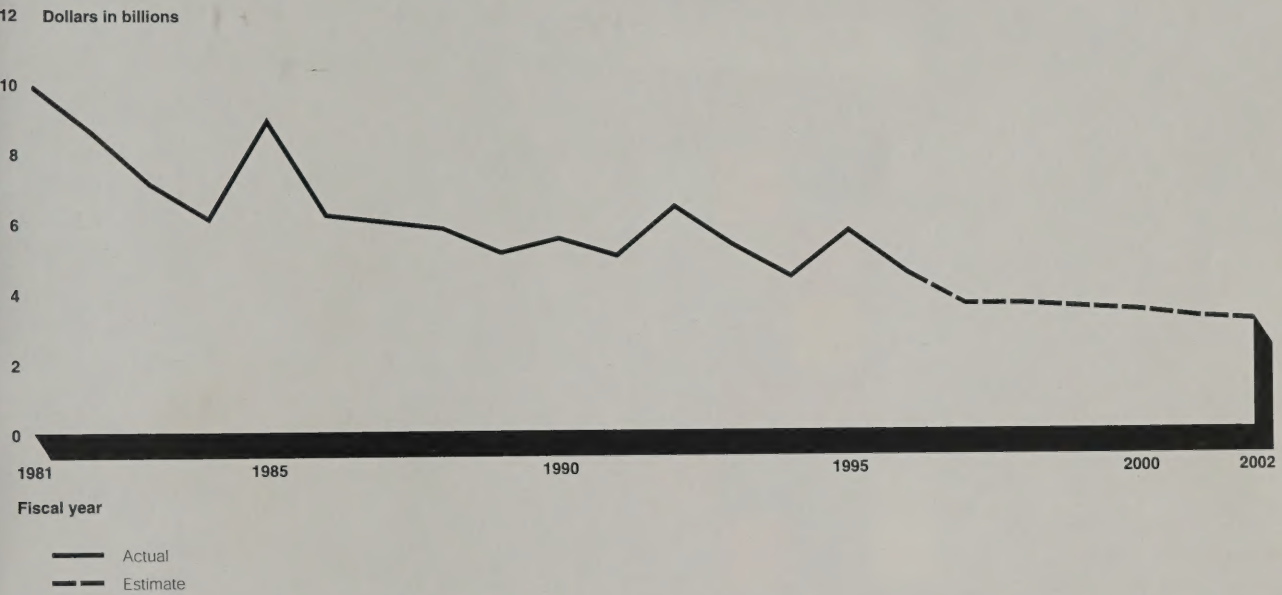


Investment outlays in the Energy function (270), which includes Tennessee Valley Authority and Department of Energy activities, show a downward trend similar to the natural resources function. As seen in figure 15, constant dollar outlays were almost \$10 billion in 1981 but dropped to under \$5 billion in 1996. Despite upward spikes in outlays in 1985, 1992, and 1995, the overall trend was still downward. Estimated outlays for 1997 to 2002 show a continued decline to \$3 billion.





Figure 15: Investment Outlays for the Energy Function in Constant 1992 Dollars, Fiscal Years 1981 Through 2002



We are sending copies of this report to the Chairman of the Senate Budget Committee, the Chairman of the House Science Committee, and the Chairman and Ranking Minority Member of the House Budget Committee. Copies will also be sent to others on request.

Please contact me at (202) 512-9142 if you or your staffs have any questions concerning this letter. Christine Bonham, Assistant Director, and Robert Sexton and John Mingus, Senior Evaluators, were the major contributors to this report.

*Susan J. Irving*

Susan J. Irving  
Associate Director, Budget Issues

